

Claims

1. An air conditioning system for running a refrigeration cycle by circulating refrigerant through a refrigerant circuit provided with a heat-source side heat exchanger and a utilization side heat exchanger and supplying air having passed through the utilization side heat exchanger to inside a building to cope with latent heat load and sensible heat load in the building, wherein

the refrigerant circuit is wholly disposed in or outside the building,

an adsorption heat exchanger with an adsorbent on the surface thereof is connected as the utilization side heat exchanger in the refrigerant circuit, and

the refrigerant circuit alternately creates an adsorption action of allowing moisture in the air to adsorb on the adsorption heat exchanger and a regeneration action of allowing moisture to desorb from the adsorption heat exchanger.

2. An air conditioning system for running a refrigeration cycle by circulating refrigerant through a refrigerant circuit provided with a heat-source side heat exchanger and a utilization side heat exchanger and supplying air having passed through the utilization side heat exchanger to inside a building to cope with latent heat load and sensible heat load in the building, wherein

the refrigerant circuit comprises an indoor circuit including the utilization side heat exchanger and disposed in the building, an outdoor circuit including the heat-source side heat exchanger and disposed outside the building, and an interconnecting line connecting between the indoor circuit and the outdoor circuit,

an adsorption heat exchanger with an adsorbent on the surface thereof is connected as the utilization side heat exchanger in the refrigerant circuit, and

the refrigerant circuit alternately creates an adsorption action of allowing moisture in the air to adsorb on the adsorption heat exchanger and a regeneration action of allowing

moisture to desorb from the adsorption heat exchanger.

3. An air conditioning system for running a refrigeration cycle by circulating refrigerant through a refrigerant circuit provided with a heat-source side heat exchanger and a utilization side heat exchanger and supplying air having passed through the utilization side heat exchanger to inside a building to cope with latent heat load and sensible heat load in the building, wherein

an adsorption heat exchanger with an adsorbent on the surface thereof and an air heat exchanger for exchanging heat between air and refrigerant are connected as the utilization side heat exchangers in the refrigerant circuit,

the refrigerant circuit comprises an indoor circuit including the air heat exchanger and disposed in the building, an outdoor circuit including the adsorption heat exchanger and the heat-source side heat exchanger and disposed outside the building, and an interconnecting line connecting between the indoor circuit and the outdoor circuit, and

the refrigerant circuit alternately creates an adsorption action of allowing moisture in the air to adsorb on the adsorption heat exchanger and a regeneration action of allowing moisture to desorb from the adsorption heat exchanger.

4. The air conditioning system of claim 1 or 2, wherein an air heat exchanger disposed in the building for exchanging heat between indoor air and refrigerant, together with the adsorption heat exchanger, are connected as the utilization side heat exchangers in the refrigerant circuit.

5. The air conditioning system of claim 1, 2 or 3, wherein

the refrigerant circuit includes first and second adsorption heat exchangers as the utilization side heat exchangers, and

the refrigerant circuit is configured to repeatedly alternate between a mode in

which an adsorption action of the first adsorption heat exchanger and a regeneration action of the second adsorption heat exchanger concurrently take place and a mode in which a regeneration action of the first adsorption heat exchanger and an adsorption action of the second adsorption heat exchanger concurrently take place.

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6. The air conditioning system of claim 1, 2 or 3, wherein the air conditioning system ventilates the building by supplying to inside the building air taken in from outside the building.

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7. The air conditioning system of claim 1, 2 or 3, wherein the air conditioning system ventilates the building by discharging to outside the building air taken in from inside the building.

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8. The air conditioning system of claim 1, 2 or 3, wherein the air conditioning system ventilates the building by supplying to inside the building air taken in from outside the building and concurrently discharging to outside the building air taken in from inside the building.

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9. The air conditioning system of claim 6 or 8, wherein the air taken in from outside the building is supplied to inside the building after passing through the adsorption heat exchanger.

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10. The air conditioning system of claim 7 or 8, wherein the air taken in from inside the building is discharged to outside the building after passing through the adsorption heat exchanger.

11. The air conditioning system of claim 7 or 8, wherein the air taken in from inside the

building, together with the air taken in from outside the building, are discharged to outside the building after passing through the adsorption heat exchanger.

12. The air conditioning system of claim 1, 2 or 3, wherein air taken in from outside the building is discharged to outside the building after passing through the adsorption heat exchanger.